EMOTIONAL AND BEHAVIORAL PROBLEMS AMONG ADOLESCENT SMOKERS AND THEIR HELP-SEEKING BEHAVIOR

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Abstract. We carried out a cross sectional study to detect emotional and behavioral problems among adolescents who smoke and their help-seeking behavior. This study was conducted in Sarawak, East Malaysia, between July and September 2006. Emotional and behavioral problems were measured using the Youth Self-Report (YSR/11-18) questionnaire; help seeking behavior was assessed using a help-seeking questionnaire. Three hundred ninety-nine students participated in the study; the smoking prevalence was 32.8%. The mean scores for emotional and behavioral problems were higher among smokers than non-smokers in all domains (internalizing, p=0.028; externalizing, p=0.001; other behavior, p=0.001). The majority of students who smoked (94.7%) did not seek help from a primary health care provider for their emotional or behavioral problems. Common barriers to help-seeking were: the perception their problems were trivial (60.3%) and the preference to solve problems on their own (45.8%). Our findings suggest adolescent smokers in Sarawak, East Malaysia were more likely to break rules, exhibit aggressive behavior and have somatic complaints than non-smoking adolescents. Adolescent smokers preferred to seek help for their problems from informal sources. Physicians treating adolescents should inquire about smoking habits, emotional and behavioral problems and offer counseling if required.

Keywords: adolescent smokers, emotional, behavioral problems, help-seeking

INTRODUCTION

Smoking among adolescents is a worldwide public health problem. Smoking causes an increase in mortality and morbidity, especially with early initiation of this habit (Bartal, 2001). Smoking also causes emotional and behavioral problems among adolescents (Conwell *et al*, 2003). Smoking among adolescents inhibits healthy adaptive processes when confronted with difficulties in daily life contributing to behavioral problems (Hanna *et al*, 2001). Studies have shown adolescent smokers are more susceptible to emotional and behavioral problems

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(Giannakopoulos *et al*, 2010). Currently, there is limited data from Southeast Asia regarding emotional and behavioral problems among adolescents smokers. The aim of this study was to determine emotional and behavioral problems among adolescent smokers and to assess their help-seeking behavior.

MATERIALS AND METHODS

We conducted a cross sectional study among students from a government primary school in Sarawak, East Malaysia, from July to September 2006. This school was selected based on convenience as most of the students from this school receive their medical treatment from a health clinic where the researchers practice. The students were aged 13 to 17 years. The sample size was calculated using a smoking prevalence of 33% from an earlier study (Shamsudin *et al,* 2000) using the following formula:

Sample size, $n = (z/\Delta)^2\ p\ (1-p)$

where $z = 1.96$; $\Delta = 0.05$ (95% Confidence interval); $p = 0.33$ (smoking prevalence from an earlier Malaysian study of 33%); $n = [1.96/0.05]^2\ 0.33\ [1-0.33] \approx 400$.

Estimated sample size with a 25% drop out rate was about 500 students.

A total of 508 students were selected from the school registry using stratified cluster random sampling. These students were stratified into 5 groups based on their year of study (years 1 to 5). Each group consists of 5 classes. Three classes were randomly selected from each group by paper ballot. All students from each selected class were included in this study. The smoking status of the students (Caris *et al*, 2003) was divided into: 1) ever smoked or experimental smoker: a student who reported smoking only few puffs during the previous 30 days; 2) current smoker: a student who reported smoking a cigarette on one or more days during the previous 30 days; 3) non-smoker: a student who reported never having smoked a cigarette before.

Emotional and behavioral problems were measured using the self administered Youth Self-Report (YSR/11-18) (Achenbach, 1991) which assesses 3 main domains: 1) internalizing problem scale: anxious/depressed, withdrawn/depressed and somatic; 2) externalizing problem scale: rule-breaking behavior and aggressive behavior; 3) other problems (than internalization/externalization behavior): social problems, thought problems and attention problems.

The total score is based on the total problem scale, which is a sum of the scores for the three domains. The mean score for each behavior and total domain score were then compared between smokers and non-smokers using Student's *t*-test.

Another questionnaire, assessing help-seeking behavior determined student's tendency to seek help from primary health care providers (PHCPs) when faced with problems, reasons for not seeking help and their preferred source of consultation. These questions were created after conducting a literature review, obtaining expert opinion and having focus group discussions. Minor adjustments were made after pilot testing and content validity was assessed by experts.

Statistical software SPSS version 13.0 (SPSS, Chicago, IL) was used for data entry and analysis. The Student's *t*-test was used to compare the mean scores for emotional and behavioral problems between smoking and non-smoking students; and barriers to seeking help for emotional and behavioral problems. A p-value <0.05 was

Table 1
Comparison of mean scores for internalizing, externalizing and other problems from the Youth Self Report (YSR).

Emotional and behavioral problems	Smokers (mean score) *N*=131	Non-smokers (mean score) *N*=268	*t*	*p*-value
Internalizing behavior	18.6	16.6	2.202	0.028
Anxious	8.5	7.7	1.767	0.078
Withdrawn/depressed	4.9	4.9	0.473	0.636
Somatic complaints	5.2	4.1	3.174	0.002
Externalizing behavior	20.0	12.7	8.695	0.001
Rule-breaking behavior	7.9	4.0	10.25	0.001
Aggressive behavior	12.1	8.7	6.336	0.001
Other problems (besides internalizing/ externalizing behavior)	26.1	21.6	4.220	0.001
Social problems	6.5	5.8	2.007	0.038
Thought problems	5.8	4.1	4.414	0.001
Attention problems	8.3	7.0	3.855	0.001
Other problems	5.5	4.7	3.033	0.003
Total problem score	64.7	50.9	5.574	0.001

considered significant with 95% confidence interval (95% CI).

Approval to conduct this study was obtained from the University Kebangsaan Malaysia ethics committee (FF-105-2006, 01/06/06) and consents were obtained from the school principal, state education department and parents.

RESULTS

Of the 508 students selected, 445 were present on the days the study was conducted and 399 completed the questionnaires satisfactorily and returned them (response rate of 89.7%). The remaining questionnaires were either not completed or not returned. The smoking prevalence among the students in this study was 32.8% (*n*=131); non-smokers comprised 67.2% of subjects (*n*=268). The socio-demographic details and smoking behavior of these students have been described elsewhere (Juslina *et al*, 2011).

Overall, the mean scores for emotional and behavioral problems among smokers were significantly higher for all domains than non-smokers (internalizing, p=0.028; externalizing, p=0.001 and other behavior, p=0.001). Rule breaking and aggressive behavior were significantly more common among smokers (Table 1). Among the internalizing problems, somatic complaints were significantly more common among smokers (p=0.002). Headache, nausea and abdominal discomfort were the common complaints.

The majority of smoking students (94.7%, *n*=124) stated they would not seek help from PHCPs for emotional problems. The most common reason (60.3%) given for not seeking help from a PHCP was the belief their problem was not serious enough to seek professional help (45.8%)

Table 2
Common barriers to seeking help from primary health care providers.

Barriers to help-seeking	Smoking students (*N*=131) *n* (%)
Problems were not serious	79 (60.3)
Solved own problem	60 (45.8)
Did not have any problems	57 (43.5)
Problems got better by themselves	50 (38.2)
Family/friends would help	47 (35.9)
Problems were too personal	45 (34.4)
Concerned about family's opinion	41 (31.3)
Concerned about friend's opinion	33 (25.2)
Time consuming	29 (22.1)
Did not know where to go	24 (18.3)
Felt ashamed	23 (17.6)
Services too expensive	20 (15.3)
Transportation problems	18 (13.7)
Would not have done any good	14 (10.7)
Family objections	8 (6.1)
Would not trust advice/help offered	7 (5.3)

Respondents were allowed to give more than one answer.

Table 3
Smoking student's source of help for dealing with emotional problems.

Sources of help	Smoking students (*N*=131) *n* (%)
Friends	104 (79.4)
Parents	90 (68.7)
Siblings	61 (46.6)
Teachers	37 (28.2)
Religious person	16 (12.2)
School counselor	12 (9.2)
Internet chat room	10 (7.6)
Primary health care provider	8 (6.1)
Psychiatrist, psychologist, social worker	3 (2.3)

Respondents were allowed to give more than one answer.

and they preferred to solve their own problems (Table 2). Smokers preferred to seek help from friends (79.4%), parents (68.7%) or siblings (46.6%) rather than PCHPs (6.1%) for their emotional and behavioral problems (Table 3).

Adolescent smokers who claimed they "did not have any problems", had lower mean scores for internalizing and externalizing behavior than those who admitted they "had problems". This means that smokers with higher mean behavioral problem scores had greater insight into their problems. Significant barriers to seeking help from PCHPs included "problems were too personal", "concern about family's or friend's opinions" and "did not know where to go" (Table 4).

DISCUSSION

In this study the mean scores for internalizing behavior, especially somatic complaints, were significantly higher among smoking adolescents than non-smoking adolescents (p=0.002). Common complaints included headaches, nausea and abdominal discomfort. Studies from China showed a significantly higher prevalence of internalizing behavior among smoking students than non-smoking students (p<0.001) with headaches, stomach aches, backaches and morning fatigue being the most common somatic complaints (Kuo *et al*, 2002; Liu, 2003).

The overall mean scores for externalizing behavior for both rule-breaking and aggressiveness among adolescent smokers, were significantly higher than non-smokers (both p=0.01). These results suggest adolescents who smoke are more prone to aggressive and rule breaking behavior. Previous studies have demonstrated a higher risk for developing delinquent behavior, academic difficulties, high

Table 4
Barriers to seeking help from primary health care professionals by smoking students with internalizing and externalizing behavior.

Barriers to seeking help	Group	*n* (*N*=131)	Internalizing behavior			Externalizing behavior		
			Mean score	*t*	*p*-value	Mean score	*t*	*p*-value
Do not have problems	Yes	57	14.9	-	0.001	17.3	-	0.004
	No	74	21.4	4.378		22.1	2.958	
Problems too personal	Yes	45	21.2	2.477	0.015	22.2	2.431	0.011
	No	86	17.2			18.1		
Concerned about family's opinion	Yes	41	21.7	2.775	0.006	22.6	2.141	0.034
	No	90	17.1			18.8		
Concerned about friend's opinion	Yes	33	21.7	2.403	0.018	23.1	2.185	0.031
	No	98	17.5			19.0		
Do not know where to go	Yes	24	25.2	4.286	0.001	24.5	2.662	0.010
	No	107	17.1			19.0		

risk behavior, early initiation of sexual behavior and alcohol and substance abuse with early onset smoking (Ellickson *et al*, 2003; Hussin *et al*, 2004).

The mean scores for other problems, such as social, thought and attention problems, were higher among smokers than non-smokers ($p<0.05$). This finding is in agreement with previous studies (Kuo *et al*, 2002; Liu, 2003). A survey by Hussin *et al* (2004) found 43.6% of young smokers blamed smoking for their poor academic performance secondary to lack of attention.

The majority of students (94.7%) who smoked did not seek help from PHCPs for their emotional or behavioral problems. The main reasons given for this was the belief their problems were not serious or they chose to solve their own problems. Being "concerned about family and friend's opinions" was also a barrier for seeking help. Those needing help may have feared the stigma of being labeled as weak by their peers or family members. Adolescent smokers also thought their problems were too personal to be shared, highlighting the importance of confidentiality.

Some of the subjects "did not know where to go" when faced with problems. This may be due to a lack of publicity of primary health care service leading to lack of awareness. Another reason is the students may have been under the impression PHCPs should be consulted only for health problems and not emotional problems. Other studies have shown similar results (Churchill *et al*, 2000; Tishby *et al*, 2001). PHCPs should display services of the clinic using signs and also organize community visits to create awareness of services.

Other barriers to seeking help were the belief it was "time consuming", they "felt shy", it "would not have done any good", "transportation problems" and they "would not trust the advice or help

offered". These factors suggest adolescents are concerned about communication, accessibility and the possibility of embarrassment. This may be due to the phase adolescents go through when developing privacy, independence and autonomy focusing on confidentiality as an important issue (Caris *et al*, 2003). Identifying adolescents' concerns and expectations would allow PHCPs to better meet the needs of this group.

Our findings show that students prefer to seek help from informal sources, such as family members and friends. Only a small percentage of students who smoked admitted they needed professional help. Boldero *et al* (1995) also found most adolescents prefer to seek help from informal sources, such as parents, siblings and friends. This is probably because adolescents already had an established relationship with those sources.

Limitations of this study included possible bias in answering the self-administered questionnaires.

In conclusion, this study demonstrates that adolescent smokers are at higher risk of developing internalizing, externalizing and other behavioral problems than their non- smoking peers. Physicians caring for adolescents need to be aware the impact of smoking on adolescents extends beyond the physical body and affects their emotions and behavior. Adolescents who smoke should been screened for these problems and if necessary managed in conjunction with a psychiatrist, psychologist or counselor. Adolescents presenting to a primary health care center should be screened for smoking and if necessary for underlying emotional and behavioral problems. Smoking cessation programs should include management of physical and mental health. Available services at primary health care centers should be advertised to the public to improve utilization. Barriers to adolescent help-seeking behavior should be taken into consideration when planning and implementing policies for improving adolescent health care services.

ACKNOWLEDGEMENTS

The authors would like to thank Universiti Kebangsaan Malaysia for funding this project.

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